

**United States District Court**  
EASTERN DISTRICT OF TEXAS  
SHERMAN DIVISION

ONPOINT SYSTEMS, LLC

*Plaintiff,*

v.

PROTECT ANIMALS WITH  
SATELLITES, LLC.

*Defendant.*

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Civil Action No. 4:20-CV-0657-ALM

**CLAIM CONSTRUCTION MEMORANDUM AND ORDER**

Before the Court is Plaintiff OnPoint Systems, LLC’s (“Plaintiff’s” or “OPS’s”) Claim Construction Opening Brief (Dkt. #67), Defendant Protect Animals With Satellites, LLC’s (“Defendant’s” or “PAWS’s”) Responsive Claim Construction Brief (Dkt. #71), and Plaintiff’s Claim Construction Reply Brief (Dkt. #73).<sup>1</sup> Also before the Court are the parties’ November 22, 2021 Joint Claim Construction and Prehearing Statement (Dkt. #66) and the parties’ March 4, 2022 Joint Claim Construction Chart (Dkt. #79). The Court held a claim construction hearing on March 28, 2022, to determine the proper construction of the disputed claim terms in U.S. Patent No. 9,848,295 (the “’295 Patent”), U.S. Patent No 9,538,329 (the “’329 Patent”), U.S. Patent No. 9,922,522 (the “’522 Patent”), and U.S. Patent No. 9,924,314 (the “’314 Patent”) (collectively, “the Asserted Patents”). Shortly before the start of the March 28, 2022 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties’ arguments and facilitating discussion.

The Court issues this Claim Construction Memorandum Opinion and Order and hereby

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<sup>1</sup> Citations to the parties’ filings are to the filing’s number in the docket (Dkt. #) and pin cites are to the page numbers assigned through ECF.

incorporates-by-reference the claim construction hearing and transcript. For the following reasons, the Court provides the constructions set forth below.

## I. BACKGROUND

The '295 Patent, titled "Device and Method for Containing and Tracking a Subject Using Satellite Positioning Data," issued on December 19, 2017, and was filed on June 23, 2016. Plaintiff contends that the '295 Patent is generally "directed to a particular technique (mathematically casting a ray) to determine whether the subject is inside or outside of the containment zone." Dkt. #67 at 8-9. The Abstract of the '295 Patent states:

A device to be disposed on a subject for determining whether the subject is inside or outside of a containment zone defined by a containment perimeter. There is a positioning unit for generating position data, including satellite positioning data, of the subject; the position data. There is a processor unit, in communication with the positioning unit, configured to receive data from a memory representing a plurality of line segments forming the containment perimeter and obtain the position data of the subject. The processor casts a ray from the position of the subject toward a line segment of the containment perimeter and determines the number of line segments that are intersected by the ray. The processor determines from number of line segments intersected by the ray, if the subject is inside the containment zone or outside of the containment zone.

Claim 1 of the '295 Patent is an illustrative claim and recites the following elements (disputed terms in italics):

1. A device to be disposed on a subject for determining whether the subject is inside or outside of a *containment zone* defined by a *containment perimeter*, the device comprising:
  - A positioning unit for generating position data corresponding to the position of the subject; the position data including satellite positioning data; and
  - A processor unit, in communication with the positioning unit, configured to:
    - Receive data from a memory representing a plurality of line segments forming the *containment perimeter*;
    - Obtain from the positioning unit the position data corresponding to the position of the subject;*

*Mathematically cast a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter;*

Mathematically determine the number of line segments of the plurality of line segments that are intersected by the ray; and

Determine, from the number of line segments of the plurality of line segments intersected by the ray, whether the subject is inside the *containment zone* or outside of the *containment zone*.

The '329 Patent, titled "Device and Method for Containing and Tracking a Subject Using Satellite Positioning Data" issued on January 3, 2017, and was filed on June 23, 2016. Plaintiff contends that the '329 Patent is generally "directed to using the carrier-to-noise ratio of satellite signals as proxy for whether the subject (e.g., dog) is 'under' or 'not under' a structure." Dkt. #67 at 9. The Abstract of the '329 Patent states:

A device disposed on a subject for determining whether the subject is inside or outside of a containment zone, the containment zone having a portion of a structure intersecting the perimeter thereof. There is a positioning unit for generating position data, including satellite position data having a carrier to noise ratio. There is a processor unit configured to determine if the carrier to noise ratio is greater than a first predetermined threshold indicating that the subject is not under the structure or less than a second predetermined threshold indicating that the subject is under the structure. If the carrier to noise ratio is greater than the first predetermined threshold, the processor unit determines from the position data if the subject is inside or outside of the containment zone and if less than the second predetermined threshold, the subject is assigned to a virtual position in the containment zone different.

Claim 12 of the '329 Patent is an illustrative claim and recites the following elements (disputed term in italics):

12. A method for determining whether the subject is inside or outside of a *containment zone* defined by a *containment perimeter*, the *containment perimeter* intersecting a portion of a *structure*, using a device disposed on the subject, the method comprising:

generating position data corresponding to the position of the subject; the position data comprising satellite positioning data, including a carrier to noise ratio;

determining from the position data if the carrier to noise ratio is greater than a *first predetermined threshold* indicating that the subject is not under the *structure* or less than a *second predetermined threshold* indicating that the subject is under the *structure*;

if the carrier to noise ratio is greater than the *first predetermined threshold*, determine from the position data if the subject is inside the *containment zone* or if the subject has exited the *containment zone*; and

If the carrier to noise ratio is less than *the second predetermined threshold*, assign the subject to a virtual position in the *containment zone* different from the actual position of the subject based on the position data.

The '522 and '314 Patents, titled "Device and Method for Containing a Subject Using Satellite Positioning Data" issued on March 20, 2018, and were filed on April 7, 2017. Plaintiff contends that the '522 and '314 Patents are generally "directed to the use of satellite data and 'linear acceleration' to determine the geolocation of the subject and then to either contain or track it." Dkt. #67 at 9 (emphasis in original). The Abstract of the '522 and '314 Patents states:

A device disposed on a subject to maintain the subject within a containment zone and track the subject if the subject exits the containment zone. The device includes a positioning unit for generating position data including satellite positioning data. There is a processor unit to determine from the position data if the subject is inside or outside of the containment zone. The processor unit operates in a containment mode when the subject is inside the containment zone and in a tracking mode when the subject exits the containment zone. A correction unit issues a stimulus when the subject exits the containment zone and terminates the stimulus when the processor unit enters the tracking mode from the containment mode. There is a communication unit which transmits an alert to an electronic device of an operator when the processor unit transitions from the containment to tracking mode.

Claim 1 of the '522 Patent is an illustrative claim and recites the following elements (disputed term in italics):

1. A device configured to be disposed on a subject for use by an operator for *maintaining the subject* within a *containment zone*, the device comprising:
  - A positioning unit* for generating satellite positioning data corresponding to a *position of the subject* and motion data corresponding to the motion of the subject;
  - A memory for storing *containment zone* data defining the *containment zone*;
  - A processor unit, in communication with the positioning unit and the memory, *configured to determine from the motion data, a linear acceleration of the subject* and configured to determine from the satellite positioning data, the *linear acceleration of the subject*, and the *containment zone* data if the subject is inside the *containment zone* or if the subject has exited the *containment zone*; and

A correction unit, in communication with the processor unit, configured to issue the subject a stimulus when the subject exits the *containment zone*.

Claim 1 of the '314 Patent is an illustrative claim and recites the following elements (disputed term in italics):

1. A device configured to be disposed on a subject for use by an operator for tracking the subject, the device comprising:

*A positioning unit for generating satellite positioning data corresponding to a position of the subject and motion data corresponding to the motion of the subject;*

*A processor unit, in communication with the positioning unit, configured to determine from the motion data a linear acceleration of the subject, and configured to determine from the linear acceleration of the subject and from the satellite positioning data the location of the subject; and*

*A communication unit, in communication with the processor unit, configured to transmit to an electronic device of the operator by way of a communication network the location of the subject to allow the operator to track the location of the subject on the electronic device.*

## II. LEGAL PRINCIPLES

### A. Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of

ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (quotation marks omitted) (“There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.”) *cert. granted, judgment vacated*, 135 S. Ct. 1846 (2015).

“The claim construction inquiry . . . begins and ends in all cases with the actual words of the claim.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). “[I]n all aspects of claim construction, ‘the name of the game is the claim.’” *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)) *overruled on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015). First, a term’s context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim’s meaning, because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term’s meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or

disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor’s lexicography governs. *Id.*

The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office (“PTO”) and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1318; *see also Athletic Alts., Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be “unhelpful as an interpretive resource”).

Although extrinsic evidence can also be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at

1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are not helpful to a court. *Id.* Extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.* The Supreme Court has explained the role of extrinsic evidence in claim construction:

In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be “so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning”). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the “evidentiary underpinnings” of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.

*Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331–32 (2015).

## **B. Departing from the Ordinary Meaning of a Claim Term**

There are “only two exceptions to [the] general rule” that claim terms are construed according to their plain and ordinary meaning: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution.”<sup>2</sup> *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d

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<sup>2</sup> Some cases have characterized other principles of claim construction as “exceptions” to the general rule, such as the statutory requirement that a means-plus-function term is construed to cover the corresponding structure disclosed in the specification. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1367 (Fed. Cir. 2002).



1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (“[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.”). The standards for finding lexicography or disavowal are “exacting.” *GE Lighting Sols.*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* (quoting *Thorner*, 669 F.3d at 1365); *see also Renishaw*, 158 F.3d at 1249. The patentee’s lexicography must appear “with reasonable clarity, deliberateness, and precision.” *Renishaw*, 158 F.3d at 1249.

To disavow or disclaim the full scope of a claim term, the patentee’s statements in the specification or prosecution history must amount to a “clear and unmistakable” surrender. *Cordis Corp. v. Bos. Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009); *see also Thorner*, 669 F.3d at 1366 (“The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.”). “Where an applicant’s statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable.” *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

### **C. Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA)**

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. A claim, when viewed in light of the intrinsic evidence, must “inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). If it does not, the claim fails § 112, ¶ 2 and is therefore invalid as indefinite. *Id.* at 901. Whether a claim is indefinite is determined from the perspective of one of ordinary skill in the art as of the time the application for the patent

was filed. *Id.* at 911. As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017). “[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).

When a term of degree is used in a claim, “the court must determine whether the patent provides some standard for measuring that degree.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quotation marks omitted). Likewise, when a subjective term is used in a claim, “a court must determine whether the patent’s specification supplies some standard for measuring the scope of the [term].” *Ernie Ball, Inc. v. Earvana, LLC*, 502 F. App’x 971, 980 (Fed. Cir. 2013) (citations omitted). The standard “must provide objective boundaries for those of skill in the art.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014).

#### **D. Means-Plus-Function Limitations**

Where a claim limitation is expressed in “means plus function” language and does not recite definite structure in support of its function, the limitation is subject to 35 U.S.C. § 112, ¶ 6. *Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). In relevant part, 35 U.S.C. § 112, ¶ 6 mandates that “such a claim limitation ‘be construed to cover the corresponding structure . . . described in the specification and equivalents thereof.’” *Id.* (citing 35 U.S.C. § 112, ¶ 6). Accordingly, when faced with means-plus-function limitations, courts “must turn to the written description of the patent to find the structure that corresponds to the means recited in the [limitations].” *Id.*

Construing a means-plus-function limitation involves multiple steps. “The first step in construing [a means-plus-function] limitation is a determination of the function of the means-plus-function limitation.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311

(Fed. Cir. 2001). Once a court has determined the limitation's function, "the next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Id.* A "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id.* Moreover, the focus of the "corresponding structure" inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id.*

### III. THE PARTIES' STIPULATED TERMS

The parties agreed to the construction of the following terms in their P.R. 4-5(d) Joint Claim Construction Charts.

Claim Term/Phrase	Agreed Construction
1. A device to be disposed on a subject for determining whether the subject is inside or outside of a containment zone defined by a containment perimeter, the device comprising  '295 Patent: Claim 1	The preamble of Claim 1 of the '295 Patent is limiting,
"a plurality of satellite constellations"  '295 Patent: Claim 4, 13 '329 Patent: Claim 4, 15 '522 Patent: Claim 2 '314 Patent: Claim 2, 8	"two or more systems of associated satellites, including but not limited to GPS (NAVSTAR), GALILEO or GLONASS"
"attitude and reference data"  '295 Patent: Claim 4, 13 '329 Patent: Claim 7, 18 '522 Patent: Claim 2	"data indicating the subject's orientation or motion relative to a known point or state"
10. A method for determining whether a subject wearing a device is inside or outside of a containment zone defined by a containment perimeter, the method comprising:  '295 Patent: Claim 10	The preamble of Claim 10 of the '295 Patent is limiting.

1. A device to be disposed on a subject for determining whether the subject is inside or outside of a containment zone defined by a containment perimeter, the containment perimeter intersecting a portion of a structure, the device comprising:  '329 Patent: Claim 1	The preamble of Claim 1 of the '329 Patent is limiting.
12. A method for determining whether the subject is inside or outside of a containment zone defined by a containment perimeter, the containment perimeter intersecting a portion of a structure, using a device disposed on the subject, the method comprising:  '329 Patent: Claim 12	The preamble of Claim 12 of the '329 Patent is limiting.
1. A device configured to be disposed on a subject for use by an operator for maintaining the subject within a containment zone, the device comprising:  '522 Patent: Claim 1	The preamble of Claim 1 of the '522 Patent is limiting.
"includes an attitude and reference system ..."  '314 Patent: Claim 2	"includes an attitude and heading reference system configured to provide the motion data"

Dkt. #79-1 at 2, 4, 6, 8-11, 13-14, 16-17, 19-22, 24, 30, 33-34. In view of the parties' agreement on the proper construction of the identified terms, the Court hereby **ADOPTS** the parties' agreed constructions.

#### **IV. CONSTRUCTION OF DISPUTED TERMS IN THE ASSERTED USWS PATENTS**

The parties' dispute the meaning and scope of twenty-five terms or phrases in the Asserted Patents.

##### **A. "containment perimeter" and "containment zone"**

<u>Disputed Term</u>	<u>Plaintiff's Proposal</u>	<u>Defendant's Proposal</u>
"containment perimeter"	No construction necessary, but in the alternative, "line segments arranged in the shape of a polygon"	Indefinite.
"containment zone"	No construction necessary, but in the alternative, "area defined by, and including a perimeter"	Indefinite.

### 1. Analysis

The term "containment perimeter" appears in Claims 1 and 10 of the '295 Patent, and Claims 1 and 12 of the '329 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The term "containment zone" appears in Claims 1 and 10 of the '295 Patent, and Claims 1 and 12 of the '329 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The parties dispute whether terms "containment perimeter" and "containment zone" are indefinite.<sup>3</sup>

Defendant argues that "containment zone" and "containment perimeter" are inherently ambiguous, because they describe a zone to contain the subject, while allowing the subject to exit. Defendant contends that the terms appear to require keeping the subject within the perimeter of the zone, because "containment" modifies "zone" and "perimeter." According to Defendant, the claims conflict with the terms' plain meaning, because they allow the subject to exit the containment zone, creating ambiguity as to the scope of "containment."

Defendant also argues that a person of ordinary skill in the art would be unable to distinguish "containment zones" from other zones. Defendant contends that Figure 1 depicts three

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<sup>3</sup> The parties' arguments for this disputed term can be found in Plaintiff's Opening Claim Construction Brief (Dkt. #67 at 11-16); Defendant's Responsive Claim Construction Brief (Dkt. #71 at 12-16); and Plaintiff's Reply Claim Construction Brief (Dkt. #73 at 5-7).

different “zones” (safe zone 12, warning zone 14 and out-of-bounds zone 16), and two different “perimeters” (perimeter 20 and perimeter 24). Defendant argues that a person of ordinary skill in the art would be unable to distinguish why safe zone 12 is not a containment zone, while the combined safe zone 12 and warning zone 14 is a containment zone. Defendant contends that both are defined by a perimeter and neither “contains” the subject.

Regarding Plaintiff’s alternative construction, Defendant argues that Plaintiff seeks to impermissibly remove “containment” from the claims altogether. Defendant also argues that Plaintiff’s construction seeks to impermissibly add a requirement that the perimeter must include multiple line segments, which it contends would exclude the preferred embodiment from the scope of the claims. According to Defendant, the preferred embodiment illustrated in Figures 1 and 13, has only a single line segment. Defendant also argues that Figure 13 shows a perimeter 291 defining an “out-of-bounds zone 290,” which it contends is the polar opposite of a “containment zone.”

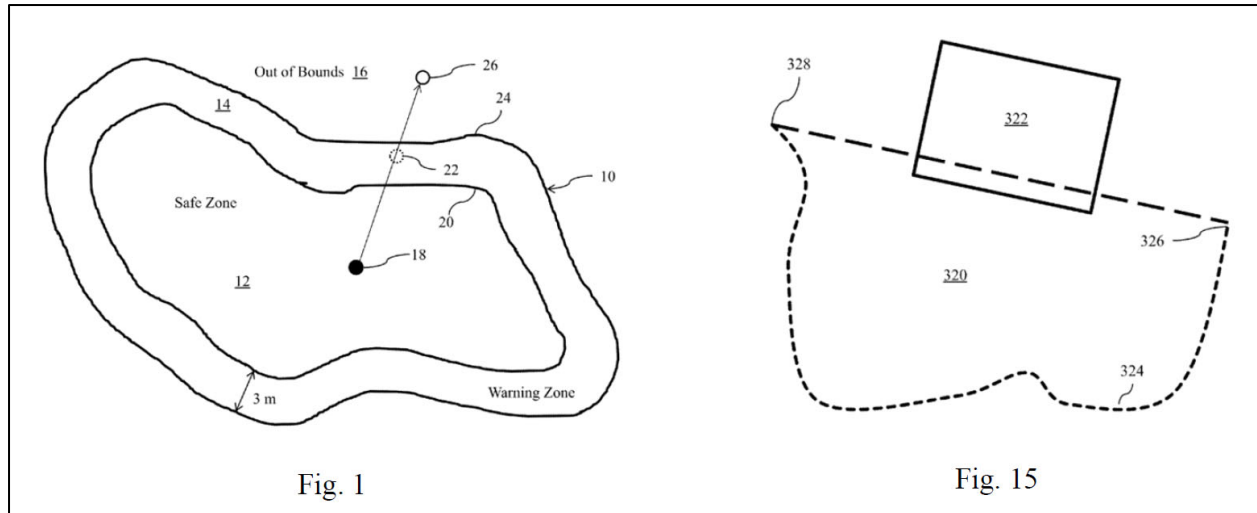
The Court finds that the terms are not indefinite. Starting with the claim language, the “containment perimeter” defines the “containment zone.” *See, e.g.*, ’295 Patent at Claim 1. (“a containment zone defined by a containment perimeter”); ’329 Patent at Claim 1 (same). Thus, the “containment perimeter” forms the outer boundary of the containment zone. The claim language also specifies that the form/composition of the containment perimeter is line segments. *See, e.g.*, ’295 Patent at Claim 1 (“a plurality of line segments forming the containment perimeter”); *id.* (“...toward a line segment of the plurality of line segments representing the containment perimeter”). The line segments are not physical (such as wooden pickets nailed to fence posts). Instead, the line segments are virtual, meaning they are comprised of data. *See id.* (“Receive data from a memory representing a plurality of line segments”). The data describes the line segments

(*e.g.*, length, heading, relative location on the face of the Earth, etc.).

The claims also underscore the virtual nature of the containment perimeter. For example, the claimed device in the '295 Patent determines whether the subject is inside or outside the containment zone by “mathematically cast[ing] a ray” from the position of the subject towards a line segment of the containment perimeter. Mathematical operations (*e.g.*, casting) on mathematical objects (*e.g.*, rays and line segments) connotes data and numbers, not a physical boundary. The claims also distinguish between the (virtual) containment perimeter and the (tangible/physical) structure it overlays. For example, the containment perimeter “intersect[s]” a portion of the claimed structure.” ’329 Patent at Claim 1 at Preamble.

The specification provides additional guidance by describing an example of how a containment perimeter is created. The specification describes walking the collar along the perimeter, recording the GNSS-based latitude/longitude waypoints. *See, e.g.*, '295 Patent at 10:3–29. This further indicates that the “containment perimeter” is comprised of data (*i.e.*, it is virtual). Likewise, the specification states that “a desired containment perimeter is a good/closed or properly formed perimeter, *i.e.* a perimeter which is in the shape of a polygon. The containment area can be as large and have as many sides as desired as long as the polygon does not intersect itself.” ’295 Patent at 12:8–12.

Moreover, the specification explains the relationship between the containment perimeter (24) and the containment zone (10), and discloses that the containment perimeter is the outer boundary of and defines the containment zone. *See, e.g.*, '295 Patent at 8:7–9 (user defines a new “containment zone/perimeter”), 9:49–51 (owner can create customized “containment area comprised of GNSS waypoints stored in onboard memory”), Fig. 1 (containment area 10 defined by containment perimeter 24). Figures 1 and 15 illustrate these points:



Specifically, Figure 15 shows the containment perimeter (324) overlaid over the perimeter of a structure (322). That is, the structure and containment perimeter may intersect, but they each retain their respective identities. Indeed, the containment perimeter is described elsewhere as being “drawn across the home.” ’295 Patent at 18:44. The specification also delineates the containment zone (10) from other zones. Figure 1, 9:13–14 (“containment zone 10”). Although the specification describes other zones within the larger containment zone (e.g., safe zone, warning zone), the containment zone remains the overall area that is not “Out of Bounds.” *See id.* at Fig. 1 (safe zone, warning zone and perimeter 20 within containment zone 10, and Out of Bounds 16). Accordingly, the Court finds that the terms are not ambiguous, and that the specification conveys the meaning of these terms with reasonable certainty to a person of ordinary skill in the art. Furthermore, there is no confusion about an alleged requirement of keeping the subject within the zone, as Defendant contends.

Thus, a person of ordinary skill in the art would understand “containment perimeter” to mean “a plurality of line segments arranged in the shape of a polygon,” and “containment zone” to mean “area defined by the containment perimeter.” Defendant’s alleged confusion about several “zones” in the specification ignores the claim language. Only one “containment zone” is claimed,



and the specification provides an example of a containment zone. Likewise, the “containment zone” and “containment perimeter” are virtual, and the intrinsic evidence indicates that the subject may breach or escape the containment zone. Accordingly, the Court finds that the claims, viewed in light of the specification, informs those skilled in the art about the scope of the invention with reasonable certainty. Thus, Defendant failed to prove by clear and convincing evidence that the terms are indefinite.

## 2. Court’s Construction

For the reasons set forth above, the Court construes the term **“containment perimeter”** to mean **“a plurality of line segments arranged in the shape of a polygon.”** The Court also construes the term **“containment zone”** to mean **“area defined by the containment perimeter.”**

### B. “structure”

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“structure”	“a fixed, man-made object capable of sheltering a subject”	Indefinite.

## 1. Analysis

The term “structure” appears in Claims 1 and 12 of the ’329 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The parties dispute whether the term “structure” is indefinite.<sup>4</sup>

Defendant argues that the homes shown in the following pictures illustrate some of the difficulty a person of skill in the art would have in determining with reasonable certainty the scope of the term “structure.”

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<sup>4</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 20-23); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 16-19); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 9-10).



Dkt. #71 at 16. Defendant contends that a person skilled the art would be unable to determine if the building on the left is (1) a single structure, (2) three separate structures (home, garage and covered walkway) or two structures (home and garage). Defendant further argues that the right-hand picture presents similar issues, but is even more indeterminate because the house, garage and breezeway all reside under a common roof.

Defendant also argues that claim language does not provide any guidance as to what constitutes a structure, except that it has a finite size such that it defines a region that is under the structure. Defendant further contends that the specification makes clear that structure is not limited to homes and garages.

As an initial matter, the intrinsic evidence indicates that the term structure is very broad. For example, the patent teaches that the preferred embodiment may use “a home, garage *or another structure*.” ’329 Patent at 18:32–34 (emphasis added). The specification also describes “a house *or other reflective structure*.” *Id.* at 16:43–47 (emphasis added). The essence of Defendant’s argument is that the term is very broad, but the breadth of a term alone does not make it indefinite. *See Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) (“The patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope.”).

Moreover, the claim language provide meaningful limitations on the recited structure. The

limitation first appears in the preamble of Claim 1 of the '329 Patent, which the parties agree is limiting. The preamble recites that “the containment perimeter intersecting portion of a structure.” This indicates that (i) the “structure” must be of a size, scale, and type that is capable of being “intersected;” and (ii) it is linked to “containment.” The body of the claim further recites that the processor unit is configured to “[d]etermine from the position data if the carrier to noise ratio is greater than *a first predetermined threshold* indicating that the subject is *not under the structure* or less than *a second predetermined threshold* indicating that the subject is *under the structure*.” The remaining claim language indicates that the system’s response differs depending on whether the subject is “under” the structure. *See, e.g.*, '329 Patent at Claim 1 (“determine from the position data if the subject is inside the containment zone”).

The specification further indicates how a person of ordinary skill in the art would understand the term “structure.”

#### Adjustment for Structures in Containment Area

*One major issue with GNSS systems is that when they are for positioning objects under structures, such as in homes, the signal quality is highly degraded and the positioning accuracy cannot be relied upon.* With the preferred embodiment, a home, garage or another structure may be used as part of the containment perimeter.

*As shown in FIG. 15 containment area 320 includes a house 322 as part of the containment perimeter 324.* In this example the pet owner started on one side 326 of house 322 and ended on the opposite side 328 to complete the containment perimeter 324. Because the ray casting algorithm needs to cast to a simple polygon, the system automatically connects the start point 326 with the endpoint 328 by drawing a straight line.

Without implementing the adjustments according to this invention, if the pet walked into the garage or house and breached the perimeter that is drawn across the home, it would receive an audible and also a static correction. This is highly undesirable for the pet as the pet should be able to enter/exit the home freely without receiving corrections.

This is achieved by assessing the NMEA message string of all satellites that the GNSS receiver is in communication with and obtaining the Carrier-to-Noise (C/N0) ratio of each satellite. The system then averages all the C/N0s together to get the average C/N0 ratio. When the pet is outside and has view of most of the sky, the C/N0 values will be high and exceed a predetermined high threshold. As long as the total averaged C/N0 value remains above this threshold, the system will deem that the pet is outside and remains in normal containment operation.

*In the event the pet walks inside the garage or home, the structure will severely attenuate the C/N0 value.* The system will have a predetermined low threshold to indicate that the pet is indoors. If the threshold is crossed, the system will determine that the pet is indoors and the system will virtually "place" the pet in the containment perimeter 324 (e.g. proximate the center), notwithstanding its actual position, in order to prevent invalid corrections. The first and second thresholds are typically different values. In the event the pet does walk out of the house/garage and the C/N0 values exceed the high threshold for a minimum amount of time, the collar will deem the pet to be outdoors and will resume normal mode of operation.

*This ensures the pet can safely enter/exit the homes and garages that have been intended to be part of the containment perimeter.*

'329 Patent at 18:27–19:7 (emphasis added). As disclosed above and recited in the claim, the structure is part of the containment perimeter and affects the carrier to noise ratio. Accordingly, a person of ordinary skill in the art would understand that the recited "structure" means "object that attenuates a carrier to noise ratio."

During the claim construction hearing, Defendant argued that every object attenuates a carrier to noise ratio, and that the parties agree that the term does not include every structure under the sun. Defendant ignores the claim language, which provides the context for the term "structure." The claim language provides further limitations on the recited "structure," by determining "if the carrier to noise ratio is greater than a first predetermined threshold indicating that the subject is not under the structure or less than a second predetermined threshold indicating that the subject is under the structure." Defendant argued that a person of ordinary skill in the art would have to

measure thresholds for every structure, so a person of ordinary skill in the art would not know how to set a threshold. The Court disagrees that this is what the claim language requires. Defendant's argument attempts to create uncertainty where there is none. The claim language requires a first predetermined threshold and a second predetermined threshold, a person of ordinary skill in the art would know how to predetermine a threshold.

Similarly, Defendant argues in their briefing that the specification does not indicate where a structure ends or begins. Once again, Defendant's contention misses the mark and does not consider the term in the context of the intrinsic evidence. The specification does not limit the term to a specific type of structure (*i.e.*, a house or garage). Moreover, whether architectural features constitute multiple structures ignores the claim language, which requires at least one structure and does not preclude more than one structure. Instead, the claim language only requires determining "if the carrier to noise ratio is greater than a first predetermined threshold indicating that the subject is not under the structure or less than a second predetermined threshold indicating that the subject is under the structure." Accordingly, the Court finds that the claims, viewed in light of the specification, informs those skilled in the art about the scope of the invention with reasonable certainty. Thus, Defendant failed to prove by clear and convincing evidence that the term is indefinite.

Regarding Plaintiff's construction, the Court does not adopt it for the following reasons. First, Plaintiff's construction would require the structure to be fixed. Plaintiff has not identified any teaching or disclaimer in the specification limiting the structure to a fixed construction. Moreover, this introduces additional questions about what it means for a structure to be "fixed." Plaintiff's construction further requires the structure to be "capable of sheltering a subject." The word "shelter" does not appear in the patent claims or specification. A building may shelter a

subject from the weather, predators, or other danger, but there is no description of what type of sheltering would be required to fall within the scope of Plaintiff's construction. Likewise, stating the structure must be man-made does not provide additional clarity. Accordingly, the Court does not adopt Plaintiff's construction.

## 2. Court's Construction

For the reasons set forth above, the Court construes the term **“structure”** to mean **“object that attenuates a carrier to noise ratio.”**

### C. “first/second predetermined threshold...”

<u>Disputed Term</u>	<u>Plaintiff's Proposal</u>	<u>Defendant's Proposal</u>
“a first predetermined threshold indicating that the subject is not under the structure”	“a first threshold (indicating a relatively strong satellite signal), making it more likely the subject is outdoors”	Indefinite.
“a second predetermined threshold indicating that the subject is under the structure”	“a second threshold (indicating a relatively weak satellite signal), making it more likely the subject is indoors”	Indefinite.

## 1. Analysis

The phrases “a first predetermined threshold indicating that the subject is not under the structure” and “a second predetermined threshold indicating that the subject is under the structure” appear in Claims 1 and 12 of the '329 Patent. The Court finds that the phrases are used consistently in the claims and are intended to have the same general meaning in each claim. The parties dispute whether the phrases are indefinite.<sup>5</sup>

Defendant initially argues that the “thresholds” are inextricably tied to the indefinite term “structure,” so the phrases are indefinite for that reason alone. For the reasons stated above, the

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<sup>5</sup> The parties' arguments for this disputed term can be found in Plaintiff's Opening Claim Construction Brief (Dkt. #67 at 23-26); Defendant's Responsive Claim Construction Brief (Dkt. #71 at 19-23); and Plaintiff's Reply Claim Construction Brief (Dkt. #73 at 10-11).

Court disagrees that the term “structure” is indefinite.

Defendant next argues that the claims cover a multitude of different “structures,” each of which have characteristics that have a different effect on received satellite signals. The specification indicates that the strength of the satellite signals diminishes (attenuates) as they pass through the atmosphere and other things such as roofs, walls trees, and even a person’s body. *See, e.g.,* ’329 Patent at 18:59–60 (“In the event the pet walks inside the garage or home, the structure will severely attenuate the C/N0 value.”). Defendant contends that a person of ordinary skill in the art would recognize that the amount the signal attenuates is affected by the materials through which it passes (*e.g.,* type of, thickness of, orientation of, etc.). Defendant also argues that the amount of background noise that arises from a different sources such as electric motors, microwaves, and even the sun varies for every structure and will also affect the carrier-to-noise ratio.

Given this, Defendant argues that the intrinsic record does not provide any guidance for how to determine an appropriate threshold. Defendant contends that the infringement analysis would rest on the specific structure under specific conditions thus rendering the claims indefinite. According to Defendant, the specification provides no guidance regarding how to determine any thresholds. The Court disagrees.

Defendant’s argument is basically that it would be difficult to set one threshold to anticipate every structure, and therefore the claims are indefinite. Claim 1 does not require a single threshold to serve as a proxy for “a multitude of different structures” of different types. Instead, the claim is directed to “a” structure and thresholds indicative of being under that structure (or not under that structure). It is not disputed that structures interfere with Global Navigation Satellite System (“GNSS”) signals. *See, e.g.,* ’329 Patent at 18:53–58 (“When the pet is outside and has view of most of the sky, the C/NO values will be high and exceed a predetermined high

threshold.”). For many common types of buildings (*e.g.*, wood-framed or brick houses with tar shingles) the difference between the GNSS signal strength indoors versus outdoors is significant. Dkt. #67-6 at ¶¶ 54-56. Thus, the carrier-to-noise ratio can be used as an indicator of when the subject is under or not under a structure. Dkt. #67-7 at ¶ 30.

Indeed, this is recited in the claims. Specifically, Claim 1 requires that the processor unit determine whether “the carrier to noise ratio is greater than a first predetermined threshold indicating that the subject is not under the structure or less than a second predetermined threshold indicating that the subject is under the structure.” A system set to indicate being under one type of building (*e.g.*, a house) would fall within the scope of the claims “if the carrier to noise ratio is ... less than a second predetermined threshold indicating that the subject is under the structure.” The claims are directed to “a” structure, not “all” structures at once. Indeed, the relevant “thresholds” are “predetermined,” only in the sense that they must exist or be fixed at some point before the comparison takes place. All of this would be understandable to a person of ordinary skill in the art. Accordingly, the Court finds that the claims, viewed in light of the specification, informs those skilled in the art about the scope of the invention with reasonable certainty. Thus, Defendant failed to prove by clear and convincing evidence that the phrases are indefinite.

Regarding Plaintiff’s construction, the Court does not adopt it for the following reasons. First, Plaintiff’s construction eliminates the requirement that the threshold is “predetermined.” Plaintiff’s construction further introduces an unclaimed concept of the subject being “indoors” or “outdoors.” Being under a structure is not necessarily the same as being indoors. For example, the subject may be outside but under a home’s covered patio. Likewise, Plaintiff’s construction further redrafts the claim language to “more likely” that the subject is indoor or outdoors.

Plaintiff’s construction also improperly introduces the unclaimed concepts of “relative”



strengths. The specification does not describe any values that would be compared against to determine the proposed “relativity.” Finally, Plaintiff’s construction redrafts the “carrier-to-noise ratio” to “satellite signal” strength. The terms are not equivalent. The claim language makes clear that the first and second thresholds are compared to the carrier-to-noise ratio, not to the satellite signal. For example, in a very noisy environment, the carrier-to-noise ratio will be relatively low, because the noise level (*i.e.*, the denominator in the ratio) is high, even when the carrier signal (the numerator) is strong. Accordingly, the Court does not adopt Plaintiff’s’ construction.

## 2. Court’s Construction

For the reasons set forth above, the Court finds that the phrase **“a first predetermined threshold indicating that the subject is not under the structure,”** and the phrase **“a second predetermined threshold indicating that the subject is under the structure”** are not indefinite, and are given their **plain and ordinary meaning**.

### D. “A device configured to be disposed on a subject for use by an operator for maintaining the subject within a containment zone”/ “when the perimeter of the containment zone is crossed by the subject returning to the containment zone”

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“A device configured to be disposed on a subject for use by an operator for maintaining the subject within a containment zone”	The preamble of claim 1 of the ’522 Patent is limiting and no other construction of the entire preamble is necessary.	This term is a limitation on claim 1.
“when the perimeter of the containment zone is crossed by the subject returning to the containment zone”	No construction necessary, but in the alternative, “area defined by, and including a perimeter”	Indefinite.

## 1. Analysis

The phrase “[a] device configured to be disposed on a subject for use by an operator for maintaining the subject within a containment zone” is the preamble for Claim 1 of the ’522 Patent.

The phrase when the perimeter of the containment zone is crossed by the subject returning to the containment zone” appears in Claim 6 of the ’522 Patent. The parties agree that this preamble of Claim 1 of the ’522 Patent is a claim limitation. The parties dispute whether the preamble is indefinite because it includes maintaining the subject in the “containment zone.” The parties also dispute whether the phrase “when the perimeter of the containment zone is crossed by the subject returning to the containment zone” in Claim 6 of the ’522 Patent is indefinite because it includes the term “containment zone.”<sup>6</sup>

Defendant argues that the commonly understood meaning of “maintain” is to “cause to continue in a specified state, relation, or position.” Defendant contends that this meaning is consistent with the patent specification which describes an operating mode designed to “keep it within the containment area, which includes safe zone 12 and warning zone 14.” Dkt. #71 at 24 (citing ’295 Patent at 6:17–23). Defendant argues that the plain language requires maintaining (*i.e.*, keeping) the subject within the containment zone.

Defendant further argues that the claim is indefinite because the preamble requires both “maintaining” the subject within the containment zone, and also requires the subject to exit the containment zone. Defendant also contends that Plaintiff’s argument is inconsistent with the disclosed embodiment in which the attempt to keep the subject within the containment zone is not ongoing. Defendant submits that a construction that excludes the preferred embodiment is rarely, if ever, correct. Finally, Defendant contends that the phrase “when the perimeter of the containment zone is crossed by the subject returning to the containment zone” is also indefinite, because it is not compatible with the requirement that the subject is maintained in the containment

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<sup>6</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 16-20); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 23-25); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 7-8).

zone in the independent claims.

For the reasons discussed above, the Court finds that the term “containment zone” is not indefinite. A person of ordinary skill in the art would understand that the term means “area defined by the containment perimeter.” Indeed, the claim language connotes taking action to discourage a subject from leaving the containment zone. The remainder of the claim describes how to accomplish this goal. The claim recites a containment zone, which is stored as data in memory. ’522 Patent at Claim 1. The claim recites a positioning unit, which generates a particular type of data (satellite positioning data) that corresponds to the position of the subject. *Id.* The claim recites a processor, which determines the subject’s relative position to the containment zone (*i.e.*, inside or outside). *Id.* The claim recites a correction unit, which is configured to issue a stimulus when the subject exits the containment zone. *Id.*

Claim 5 further specifies issuing an audible correction prior to the subject exiting the containment zone, and then a more serious correction when the subject actually does exit the containment zone. *Id.* at Claim 5. Taken together, the claim language details determining the subject’s position and taking an action (applying one or more stimuli) to discourage the subject from leaving the containment zone. In other words, the system attempts to maintain the subject in the “containment zone.”

The specification is consistent with the claim language. The specification discloses the device issuing an audible correction when the subject crosses perimeter 20, which is set via a predetermined offset from the containment perimeter, *e.g.*, 3 meters. *See, e.g.*, ’522 Patent at 6:39–53, 9:34–66. If the subject continues and breaches containment perimeter (24), the claimed device issues a static correction. *Id.* The device will then continue to issue static corrections for a predetermined amount of time, to further discourage the subject from moving any further away.

*Id.* at 6:54-56. Accordingly, the Court finds that there is no confusion or ambiguity as to the scope of this limitation. *See, e.g.*, Dkt. #67-8 at ¶¶ 8-15. Indeed, the portion of specification Defendant cites as being inconsistent describes functionality occurring sometime after the subject has exited the containment zone. Dkt. #71 at 24; *see also* '522 Patent at 6:54–60 (stating that the stimulus stops when “the pet is in the out of bounds zone” and collar transitions to “tracking mode”). Yet, the disputed limitation (“maintain within ...”) is about the activity to keep the subject inside the containment zone. '522 Patent at Claim 1. Thus, a disclosure of what happens after the subject has left the containment zone is consistent with a proper understanding of the claim language.

Similarly, there is no ambiguity with the phrase “when the perimeter of the containment zone is crossed by the subject returning to the containment zone.” A person of ordinary skill in the art would understand that “subjects” can walk into and out of “zones.” This is the plain meaning of the claim language. Specifically, the claim discusses that processor unit is configured to not issue a stimulus when the subject crosses the perimeter of the containment zone. '522 Patent at Claim 6. The purpose is to not discourage a subject from returning to the area that the subject is supposed to stay within (*i.e.*, the containment zone).

The specification is consistent with the claim language, because it similarly discloses not issuing a static correction if an out-of-bounds pet re-enters the containment area. *See, e.g.*, '522 Patent at 7:3–9, 10:1–11, Figure 1 (containment zone 10 and perimeter 24). In summary, the disclosed device issues a stimuli to a subject inside the containment zone to try to keep it within the containment zone, but does not issue stimuli to a subject trying to return to the containment zone. *See, e.g., Id.* at 6:31–7:11. That is, the system issues stimuli to try to keep the subject within the containment zone, but does not do so to avoid discouraging the subject from returning. *Id.*

Defendant also argues that a person of ordinary skill in the art would be confused as to

what the “perimeter of the containment zone” refers to. An area (or zone) has a perimeter (*i.e.*, the outermost boundary). *See e.g.*, ’522 Patent at Fig 1 (containment perimeter 24 outermost boundary of containment zone 10). The perimeter of the containment zone is its outermost boundary, which is disclosed to be the containment perimeter.

In summary, Defendant ignores the claim language and the specification, and attempts to manufacture ambiguity where there is none. The claims and specification describe what “maintain the subject within a containment zone” means in the context of these claims and the specification. Similarly, the claims and specification describe what “when the perimeter of the containment zone is crossed by the subject returning to the containment zone” means in the context of these claims and the specification. Accordingly, the Court finds that the claims, viewed in light of the specification, inform those skilled in the art about the scope of the invention with reasonable certainty. Thus, Defendant failed to prove by clear and convincing evidence that the claims are indefinite.

## 2. Court’s Construction

For the reasons set forth above, the Court construes the term **“containment zone”** in Claims 1 and 6 of the ’522 Patent to mean **“area defined by the containment perimeter.”** The Court further finds that the phrase **“[a] device configured to be disposed on a subject for use by an operator for maintaining the subject within a containment zone,”** and the phrase **“when the perimeter of the containment zone is crossed by the subject returning to the containment zone”** are not indefinite, and are given their **plain and ordinary meaning**.

### E. “position of the subject”/ “location of the subject”

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“position of the subject”	“the subject’s geographic location as determined by at least satellite positioning data”	Indefinite.

“location of the subject”	“the subject’s geographic location as determined by at least satellite positioning data and linear acceleration of the subject”	Indefinite.
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### 1. Analysis

The term “position of the subject” appears in Claim 1 of the ’522 Patent, and Claims 1 and 7 of the ’314 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The term “location of the subject” appears Claims 1, 4, 7, and 10 of the ’314 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The parties dispute whether the terms “position of the subject” and “location of the subject” are indefinite.<sup>7</sup>

Defendant argues that if the patentee uses different terms to identify similar claim limitations, those terms should have different meanings. Defendant contends that the specification provides no meaningful distinctions between the disputed terms. According to Defendant, a person of ordinary skill in the art would be unable to know the respective boundaries of the scope of these claim terms. Defendant contends that the specification uses “location” to describe geographic locations determined without linear acceleration. Dkt. #71 at 26 (citing ’295 Patent at 2:26–27, 8:58–59). Defendant also argues that without any concrete way of distinguishing position from location, a person of ordinary skill in the art would be unable to know the claim boundaries.

The Court finds that the terms are not indefinite. The claim language provides a person of ordinary skill in the art with a sufficient understanding of these two limitations. Both limitations refer to a determination of where the subject is likely located on the face of the Earth (*e.g.*, latitude

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<sup>7</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 26-27); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 25-26); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 10-12).

and longitude). In that way, the terms are similar. However, the difference is in the types of data used to arrive at that result. The claims recite that “position of the subject” must be determined by at least satellite positioning data. *See, e.g.*, ’522 Patent at Claim 1. (“...satellite positioning data corresponding to the position of the subject ...”); ’314 Patent at Claim 1 (same), Claim 7 (same). In contrast, the “location of the subject” is determined by at least satellite positioning data and linear acceleration of the subject. *See, e.g.*, ’314 Patent at Claim 1 (“...configured to determine from the linear acceleration of the subject *and* from the satellite positioning data the location of the subject...” ) (emphasis added). A person of ordinary skill in the art would reasonably understand the claim limitations in this way.

Defendant once again ignores the claim language and attempts to create ambiguity where there is none. Defendant cites two unrelated portions of the specification. Dkt. #71 at 26 (citing ’295 Patent at 2:26–27 (“background” section); ’295 Patent at 8:58-59 (tracking mode)). Neither have anything to do with how the “position of the subject” and the “location of the subject” are determined, nor do they provide any basis to vary from the plain language of the claims. As discussed above, the actual claim language delineates the two limitations. Accordingly, the Court finds that the claims, viewed in light of the specification, informs those skilled in the art about the scope of the invention with reasonable certainty. Thus, Defendant failed to prove by clear and convincing evidence that the terms are indefinite.

## 2. Court’s Construction

For the reasons set forth above, the Court finds that the terms **“position of the subject”** and **“location of the subject”** are not indefinite. The Court construes the term **“position of the subject”** to mean **“the subject’s geographic location as determined by at least satellite positioning data.”** The Court construes the term **“location of the subject”** to mean **“the subject’s**

geographic location as determined by at least satellite positioning data and linear acceleration of the subject.”

**F. “electronic device of the operator”/ “user”**

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“electronic device of the operator”	No construction necessary. Not indefinite.	Indefinite.
“user”	No construction necessary. Not indefinite.	Indefinite.

**1. Analysis**

The term “electronic device of the operator” appears in Claim 9 of the ’522 Patent. The term “user” appears in Claim 9 of the ’522 Patent. The parties dispute whether Claim 9 is facially ambiguous because it introduces the phrase “the electronic device of the operator” without antecedent basis. The parties also dispute whether Claim 9 is ambiguous because it introduces the term “*the* user” without antecedent basis.<sup>8</sup>

Defendant argues that the claims recite several electronic devices associated with the operator. Specifically, a device configured to be disposed on a subject for use by an operator, a positioning unit, a memory, a processor unit, a correction unit, and a communication unit. Defendant further argues that Claim 9 is dependent on Claim 1, and introduces “a communication unit, in communication with the processor unit.” Defendant notes that the processor unit is an electronic device recited in Claim 1. Defendant argues that Claim 9 requires that the communication unit include a Bluetooth low energy (BLE) module “configured to communicate with the electronic device of the operator or a BLE fob when the user is in close proximity to the subject wearing the device.” According to Defendant, a natural reading of the claim is that BLE

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<sup>8</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 27-28); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 26-28); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 12-13).



module in the communication unit provides the claimed “communication to the processor unit.”

Defendant also contends that a person of ordinary skill in the art may conclude that “the electronic device of the operator” is the processor unit. Defendant further argues that another natural reading of the claim language is that the “electronic device of the operator” refers to the “device configured to be disposed on a subject for use by an operator” found in the preamble of Claim 1. Defendant also argues that “the electronic device of the operator” could also refer to the positioning unit, memory, or correction unit. According to Defendant, a person of ordinary skill in the art would not understand which electronic device is “the electronic device of the operator.”

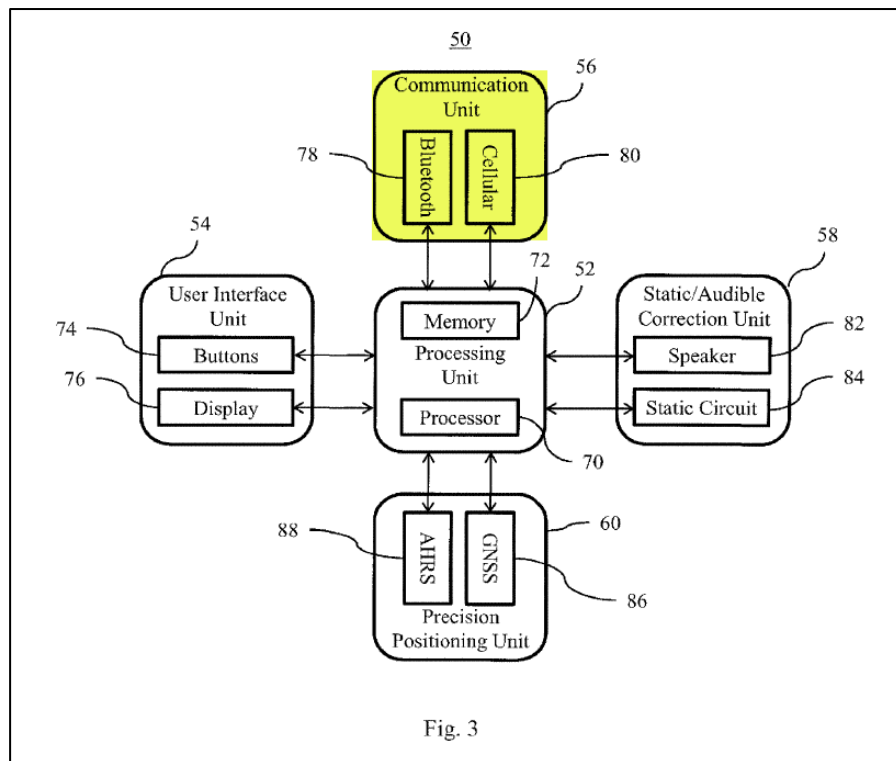
Regarding the term “user,” Defendant argues that the claim language makes it clear that the “user” and the “subject” are distinct entities. According to Defendant, it is not clear if the “the user” is the “operator” that “uses” the electronic device or if “the user” is a different entity. Defendant contends that a person of ordinary skill in the art would not know how many entities are required.

The Court finds that the lack of antecedent basis does not render the claims indefinite. The claim language and the specification illustrate how a person of ordinary skill in the art would reasonably understand the terms. The full limitation recites “wherein the communication unit includes a Bluetooth low energy (‘BLE’) module configured to communicate with the electronic device of the *operator* or a BLE fob when the *user* is in close proximity to the subject wearing the device.” ’522 Patent at Claim 9 (emphasis added). That is, the claim speaks in terms of one component (the communication unit) communicating, via BLE, with one of two possible components (the operator’s electronic device or a BLE fob). *See id.* Thus, the claim is focused on what components are communicating, not the identity of the person holding/using/owning the device. Indeed, the preamble of the Claim 1 recites that the device is “configured to be disposed

on a subject,” and Claim 9 recites that the device further includes a communication unit.

The specification is consistent with this understanding and provides further context. The specification describes a collar (*e.g.*, the device) communicating with two other devices at various times. The disclosed collar communicates with a BLE fob as part of training the subject (*e.g.*, dog) to stay within the containment zone. *See, e.g.*, ’522 Patent at 8:52–64. It also communicates with the smartphone of the operator (*e.g.*, dog owner) when, for example, the subject (*e.g.*, dog) exits the containment zone. Specifically, the specification states the following:

Communication unit 56 additionally includes a Bluetooth Low Energy (BLE) module 78 for communication with a fob (or, alternatively, the pet owner's smart device), which the operator may use during training of the pet to issue corrections. The fob/smart device transmits signals which are received by the BLE module 78 and the BLE Module 78 communicates with the static/audible correction unit 58 (through processor unit 52) to issue audible corrections via speaker unit 82 and static corrections via static circuit 84 for containment and behavioral reinforcements.



'522 Patent at 7:55–64, Figure 3 (illustrating and describing the electronic components of the stimulus collar (the device)) (highlight added). As indicated, the focus is on the components and what they do (*e.g.*, communicate with the dog collar), not the identity of the person using them.

Underscoring this point, the specification refers to “user” and “operator” interchangeably. For example, the specification refers to sending geolocation information updates to both an operator’s smart phone and to the user’s smart phone. '522 Patent at 9:8–16 (“...to the operator’s smart phone”), 9:26–28 (“to the user’s smart phone”). Other portions of the specification are similar. '522 Patent at 6:54–7:13, 8:29–33, 8:42–44, 9:3–28, 10:17–27, 15:25–29. Accordingly, the Court finds that the claim, viewed in light of the specification, inform those skilled in the art about the scope of the invention with reasonable certainty. Thus, Defendant failed to prove by clear and convincing evidence that the claims are indefinite.

## 2. Court’s Construction

For the reasons set forth above, the Court finds that the terms “**electronic device of the operator**” and “**user**” are not indefinite, and are given their **plain and ordinary meaning**.

### G. “mathematically [cast/casting] a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter”

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“mathematically [cast/casting] a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter”	“calculate a straight line that begins at the position of the subject and runs in the direction of the one or more of the line segments that make up the containment perimeter”	If the Court determines “containment perimeter” is not indefinite, this term should be construed to be: “calculate a straight line that begins at the position of the subject and runs in the direction determined to be toward one of the line segments that make up the containment perimeter, wherein the line segments are not longitude or latitude lines.”

## 1. Analysis

The phrase “mathematically [cast/casting] a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter” appears in Claims 1 and 10 of the ’295 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same general meaning in each claim. The parties agree that “towards” at least means “runs in the direction.” The parties dispute whether “toward” should be further construed to mean “runs in the direction determined to be toward,” as Defendant proposes. The parties also dispute whether the phrase should be further construed to exclude line segments that are longitude or latitude lines from the scope of the claims.<sup>9</sup>

Regarding the dispute related to the term “toward,” Defendant contends that the ray must be deliberately cast toward the line segment, whereas Plaintiff contends that the ray must run in the direction of the line segments. Plaintiff argues that the specification supports its construction “that the ray can be cast in any direction without knowing where any line segment is.” Dkt. #67 at 30 (emphasis in original). According to Plaintiff, the specification “contemplates casting a ray that does not, and will not, intersect any line segment.” *Id.* Plaintiff argues that the specification states that the number of crossing could be “0.” *Id.* at 31 (citing ’295 Patent at 15:26–27 (“If the number is even (0, 2, 4, etc.), the point (pet) lies outside the polygon.”)).

Defendant argues that the ray must be pointed in a direction that is “determined” so that the ray will hit the perimeter at least once every time, never making “0” crossings. Defendant further argues that the patentee disavowed the “0” crossing embodiment during prosecution of the patent because it reads directly on the prior art cited by the examiner.

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<sup>9</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 28-32); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 28-33); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 13-15).

The Court does not agree with Defendant's characterization of the prosecution history. That said, the plain meaning of the claim language supports Defendant's general understanding of the term. As a starting point, the Court recognizes that Plaintiff's construction replaces the term "toward" with the phrase "runs in the direction," and Defendant's construction replaces the term "toward" with "runs in the direction determined to be toward." The first issue is whether the term "toward" requires construction. The Court finds that the term "toward" does not require construction. Indeed, Defendant's construction includes "toward" in its construction. Moreover, Plaintiff represented to the Court during the claim construction hearing that it does not contend that the ray can be in "any" direction. For example, Plaintiff states that 180 degrees in the opposite direction of the line segment would not be "toward."

Defendant's primary argument is that its construction is based on a prosecution disclaimer. However, the only amendment made during the cited prosecution was to add the term "mathematically" to the claims. Specifically, Claim 1 was amended as follows:

1. **(Currently Amended)** A device to be disposed on a subject for determining whether the subject is inside or outside of a containment zone defined by a containment perimeter, the device comprising:

A positioning unit for generating position data corresponding to the position of the subject; the position data including satellite positioning data; and

A processor unit, in communication with the positioning unit, configured to:

Receive data from a memory representing a plurality of line segments forming the containment perimeter;

Obtain from the positioning unit the position data corresponding to the position of the subject;

**Mathematically** cast a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter; [[and]]

**Mathematically** determine the number of line segments of the plurality of line segments that are intersected by the ray; and

Determine, from the number of line segments of the plurality of line segments intersected by the ray, [[if]] whether the subject is inside the containment zone or outside of the containment zone.

Dkt. #71-2 at 108 (highlight added). The patentee further argued that the prior art (Santiago) did not teach the following features:

With respect to independent claim 1, Santiago does not disclose a processor configured to perform at least the following features:

- Mathematically cast a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter;
- Mathematically determine the number of line segments of the plurality of line segments that are intersected by the ray; and

- Determine, from the number of line segments of the plurality of line segments intersected by the ray, whether the subject is inside the containment zone or outside of the containment zone.

Dkt. #71-2 at 112-113. Regarding these bullet points, the patentee argued the following:

Applicant's position is that Santiago does not disclose casting a ray toward a line segment of a containment perimeter. Emitting radiation is not equivalent to casting a ray and a longitude/latitude line is not equivalent to a line segment in a containment perimeter. However, to expedite prosecution, Applicant has amended claim one to make

explicit that the operation of casting a ray toward a line segment of the plurality of line segments representing the containment perimeter is done mathematically by a processor. Clearly, this is not disclosed by Santiago.

Dkt. #71-2 at 113-114. The Court notes that the first bullet point and argument made by the patentee is the language that appears in the issued claim. Thus, the amendment was directed to “mathematically casting a ray.” The parties agree that “mathematically casting a ray” means “calculate a straight line that ... runs.” Therefore, the Court adopts this part of the parties’ constructions as it relates directly to the amendment made during prosecution. The Court further finds that this will help clarify the term “mathematically casting a ray” for the jury.

The Court further finds that the remaining claim language does not require construction. The plain language of the claim indicates that the ray is “from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter.” Plaintiff attempts to read the word “toward” out of the claim, so that it only requires “casting a ray” in *any* direction. As discussed above, this is contrary to the plain language of the claim, and the Court rejects this understanding. The ray must be cast “toward” a line segment. Plaintiff is correct that the specification recites that zero is an even number, but that reference is made in conjunction with the statement: “if we cast a ray to the closest edge, we can determine if the point is inside or outside

the polygon.” ’295 Patent at 15:21–28. All of the rays illustrated in Figure 13 intersect perimeter 250. *See, e.g.*, ’295 Patent at 15:56–59 (“As depicted, rays 282 and 284 intersect perimeter 250 three (odd) and four (even) times, respectively, just as did rays 254 and 270.”). Accordingly, a person of ordinary skill in the art would understand that “toward” is not “any” direction, but must be “in the direction” of the line segment, as the parties agreed in their proposed constructions.

To the extent that Defendant argues that Plaintiff disavowed the “well-known even-odd solution to determining if the pet is within the perimeter,” the Court rejects that argument. Defendant cites to “another of Rich’s patent publications,” and then provides a characterization of the “even-odd rule solution” it contends the publication discloses. Dkt. #71 at 30. The examiner, however, did not cite to this other reference, let alone to the portion of this reference that Defendant describes. Accordingly, there was not a clear and unambiguous disclaimer of using the even-odd solution.

Regarding Defendant’s proposed “wherein the line segments are not longitude or latitude lines,” the Court rejects this language. Adding this phrase to the end of the construction is unhelpful and would only confuse the jury. More importantly, the patentee did not disclaim this subject matter, but instead only argued that the examiner had improperly equated these lines to elements in the claim. Dkt. #71-2 at 113 (“Emitting radiation is not equivalent to casting a ray and a longitude/latitude line is not equivalent to a line segment in a containment perimeter”).

## 2. Court’s Construction

For the reasons set forth above, the Court construes the phrase **“mathematically [cast/casting] a ray from the position of the subject toward a line segment of the plurality of line segments representing the containment perimeter”** to mean **“calculate a straight line that runs from the position of the subject toward a line segment of the plurality of line segments**



representing the containment perimeter.”

**H. “a positioning unit for generating satellite positioning data corresponding to a position of the subject and motion data corresponding to the motion of the subject” / “generating satellite positioning data and motion data by a positioning unit contained in a device worn by the subject”**

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“a positioning unit for generating satellite positioning data corresponding to a position of the subject and motion data corresponding to the motion of the subject”  “generating satellite positioning data and motion data by a positioning unit contained in a device worn by the subject”	No construction necessary, not governed by 35 U.S.C. § 112(f) but, in the alternative: Claimed functions: (1) receive signals from one or more satellites and, based on the signal(s) received from said satellite(s), generate data corresponding to a position of the subject (2) measure motion of the subject and, based on that motion, generate data corresponding to motion of the subject Corresponding structures: (1) GNSS antenna and receiver. (2) 3-axis accelerometer.	These terms should be governed by 35 U.S.C. § 112(f). Recited Function: generating satellite positioning data and motion data corresponding to the motion of the subject Corresponding Structure: a global navigation satellite system receiver and an Attitude and Heading Reference System with a 3-axis gyroscope, a 3-axis accelerometer, and 3-axis magnetometer.

### **1. Analysis**

The phrase “a positioning unit for generating satellite positioning data corresponding to a position of the subject and motion data corresponding to the motion of the subject” appears in Claim 1 of the ’522 Patent and Claim 1 of the ’314 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same general meaning in each claim. The phrase “generating satellite positioning data and motion data by a positioning unit contained in a device worn by the subject” appears in Claim 10 of the ’522 Patent and Claim 7 of the ’314 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same general meaning in each claim. The parties dispute whether the phrases are means-plus-function

terms governed by 35 U.S.C. § 112(f).<sup>10</sup>

**i. Rebuttable Presumption**

Title 35 U.S.C. § 112(f) provides: “An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” It is well established that “the failure to use the word ‘means’ . . . creates a rebuttable presumption . . . that § 112, para. 6 does not apply.” *Williamson v. Citrix Online LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (citations and internal quotation marks omitted). Moreover, “[w]hen a claim term lacks the word ‘means,’ the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Id.* at 1349 (citations and internal quotation marks omitted).

Here, there is a rebuttable presumption that § 112(f) does not apply because the claims do not recite the word “means.” Therefore, the analysis proceeds in two steps. First, the Court must determine whether the phrase is in means-plus-function form pursuant to 35 U.S.C. § 112(f). *See Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1097 (Fed. Cir. 2014). If the Court determines that the phrase recites a means-plus-function limitation, then the Court proceeds to the next step and attempts “to construe the disputed claim term by identifying the corresponding structure, material, or acts described in the specification to which the term will be limited.”

**ii. The Claims are Not Subject to § 112(f).**

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<sup>10</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 32-36); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 33-37); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 15-16).

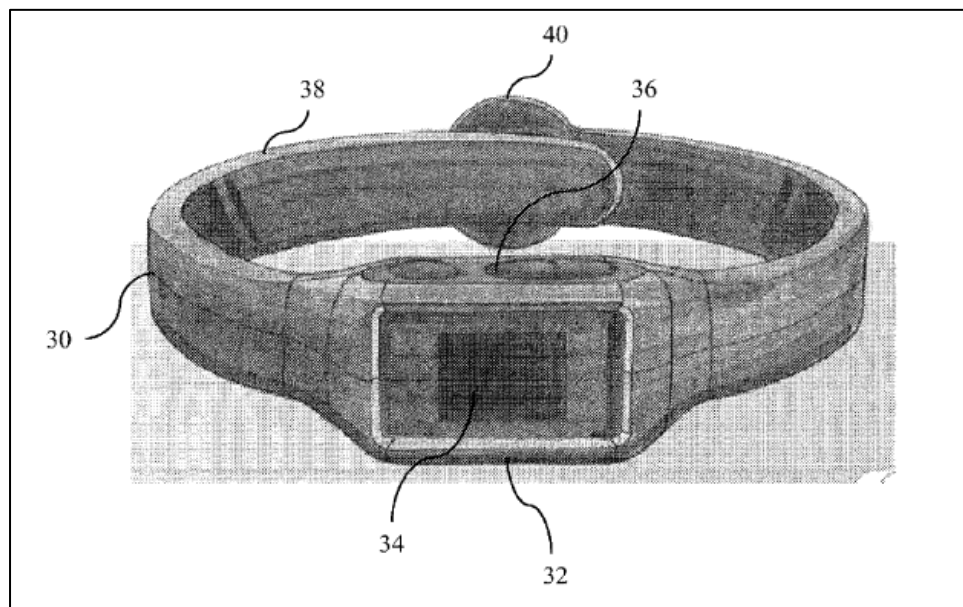
Defendant contends that “unit” is a well-known nonce word that can operate as a substitute for “means,” because it does not connote any structure. Defendant argues that Plaintiff has provided no evidence that “positioning unit” is understood by a person of ordinary skill in the art to be the name of a structure

Claim 1 of the ’522 Patent and Claim 1 of the ’314 Patent do not recite the word “means,” and Defendant has not overcome the rebuttable presumption that § 112(f) does not apply. The context of the claim confirms the structural nature of the claimed “positioning unit.” The claim specifies the objectives and operation of the “positioning unit” by stating that it operates in conjunction with a memory, a processor unit, and a correction unit. The claim additionally specifies how the “positioning unit” operates by stating that it generates “satellite positioning data corresponding to a position of the subject and motion data corresponding to the motion of the subject.” The claims further describe the structural interaction of the positioning unit, the memory, the processor unit, and the correction unit. For example, Claim 1 of the ’522 Patent recites that the processor unit is in communication with the positioning unit and the memory. The claim also recites that the correction unit is in communication with the processor unit.

By reciting the objectives of the “positioning unit,” and how the positioning unit operates within the context of the claimed invention, the claim language connotes sufficiently definite structure to one of skill in the art. *See, e.g., Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319-21 (Fed. Cir. 2004) (finding “circuit [for performing a function]” to be sufficiently definite structure because the claim recited the “objectives and operations” of the circuit); *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1295, 1301 (Fed. Cir. 2014) (finding “heuristic [for performing a function]” to be sufficiently definite structure because the patent described the operation and objectives of the heuristic); *Collaborative Agreements, LLC v. Adobe Sys.*, No. 15-

cv-03853-EMC, 2015 U.S. Dist. LEXIS 161809, at \*11-\*24 (N.D. Cal. Dec. 2, 2015) (determining “code segment [for performing a function]” to be sufficiently definite structure because the claim described the operation of the code segment); *Finjan, Inc. v. Proofpoint, Inc.*, No. 13-cv-05808-HSG, 2015 U.S. Dist. LEXIS 162504, at \*31-\*32 (N.D. Cal. Dec. 3, 2015) (determining “processor [for performing a function]” to be sufficiently definite structure because the claim described how the processor functions with the other claim components).

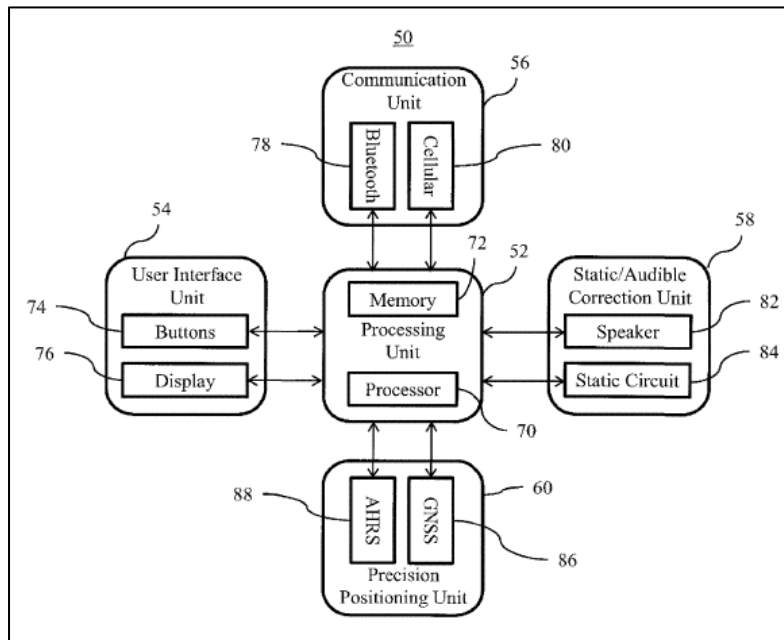
The specification further supports this understanding of the claim terms. The specification includes an exemplary embodiment of the claimed device, which is illustrated in Figure 2.



'522 Patent at Figure 2. The specification states that Figure 2 is a perspective view of a stimulus collar according to the invention. As recited in the claims, a device like the one shown in Figure 2 is “configured to be disposed on a subject.” '522 Patent at Claim 1. The specification further states that this “is a particular design of stimulus collar 30 which includes a user interface 32 with a display 34, such as an LED or OLED display, and buttons 36 for the user to input information. Collar 30 includes a band 38 which may be secured by a clasp 40 comfortably around the neck of the pet.” *Id.* at 7:10-16. A person of ordinary skill in the art would understand that devices like the

one illustrated in Figure 2, and recited in the claims, would have sufficiently definite meaning as the name for a structure.

The specification further states that “[t]he electronic components/peripherals of stimulus collar 30 are shown in schematic block diagram 50, FIG. 3.”



*Id.* at Figure 3. The specification discloses that the electronic components includes processing unit 52 which is in communication with user interface unit 54, communication unit 56, static/audible correction unit 58, and precision positioning unit 60. *Id.* at 7:27–29. The specification further states that “[p]rocessing unit 52 includes microprocessor 70 to provide overall control for the electronics and functionality of the stimulus collar 30 and a memory 72, which stores software to execute the functionality of the collar 30 as well as store the maps of containment areas defined by the user.” *Id.* at 7:29–34.

Regarding the positioning unit, the specification states that it may be “comprised of a global navigation satellite system receiver, such as a triple constellation concurrent GNSS receiver 86 and an Attitude and Heading Reference System (AHRS: 3-axis gyroscope, 3-axis accelerometer,

and 3-axis magnetometer) 88.” *Id.* at 7:65–8:2. Accordingly, Figures 2 and 3, and the related description depicts “positioning unit” in a manner identical to the depiction of other structural components employed by the invention. For example, user interface unit (with buttons 74 and display 76), processing unit (with memory 72 and processor 70), and correction unit (with speaker 82 and static circuit 84). Similar to the court’s conclusion in *VR Optics, LLC v. Peloton Interactive, Inc.*, the placement of “positioning unit” alongside and in the same format as these other structural terms highlights that the patents are using the term positioning unit to connote a known structure rather than as a nonce substitute for the word “means.” 345 F. Supp. 3d 394, 410 (S.D.N.Y. 2018).

The Court further notes that Claim 10 of the ’522 Patent and Claim 7 of the ’314 Patent are method claims. Section 112(f) may also apply to a claimed combination of steps, as in a method claim. For method claims, the initial inquiry is whether the claim limitation in question uses the phrase “step for” in describing the element. As in the case of structural claim elements, the absence of the term “step for” gives rise to a presumption that Section 112(f) does not apply. *Generation II Orthotics v. Medical Tech.*, 263 F.3d 1356 (Fed. Cir. 2001). This presumption may be overcome by a showing, by a preponderance of the evidence, that the claim recites a functional step and does not recite sufficient acts for performing the recited function. However, simply claiming a series of steps without recital of a function does not trigger the application of Section 112(f). *Epcon Gas Systems, Inc. v. Bauer Compressors*, 279 F.3d 1022 (Fed. Cir. 2002).

Furthermore, method claims that “parallel,” or have limitations similar to, apparatus claims subject to Section 112(f) are not themselves necessarily subject to the requirements of Section 112(f). *Id.* Instead, “[e]ach claim must be independently reviewed in order to determine if it is subject to the requirements of § 112, paragraph 6.” *Id.* For the reasons stated above, the Court finds that Defendant has not shown that the term “positioning unit” should be subject to Section

112(f) in Claim 10 of the '522 Patent and Claim 7 of the '314 Patent

It is true that when a limitation is a means-plus-function limitation, and the corresponding structure is software, there needs to be an algorithm for the software or else the means-plus-function limitation will be considered indefinite unless the function can be performed by a general purpose computer. *See Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1318 (Fed. Cir. 2013) (holding that the corresponding disclosure for a computer-implemented means-plus-function claim is an algorithm). But that authority is not on point because that definiteness analysis is triggered only where the limitation is a means-plus-function limitation.

## 2. Court's Construction

For the reasons set forth above, the phrase **“a positioning unit for generating satellite positioning data corresponding to a position of the subject and motion data corresponding to the motion of the subject,”** and the phrase **“generating satellite positioning data and motion data by a positioning unit contained in a device worn by the subject”** are not subject to § 112(f), and will be given their plain and ordinary meaning.

### I. “linear acceleration of the subject” / “configured to determine from the motion data, a linear acceleration of the subject” / “determining from the motion data a linear acceleration of the subject”

<u>Disputed Term</u>	<u>Plaintiff's Proposal</u>	<u>Defendant's Proposal</u>
“linear acceleration of the subject”	“acceleration of the subject compensated for the effect of gravity”	“acceleration that does not include any acceleration due to gravity”
“configured to determine from the motion data, a linear acceleration of the subject”	no construction necessary in light of construction of “linear acceleration of the subject”	“configured to determine ‘acceleration that does not include any acceleration due to gravity’ by subtracting (or otherwise removing) the acceleration due to gravity.”

“determining from the motion data a linear acceleration of the subject”	no construction necessary in light of construction of “linear acceleration of the subject”	“determining ‘acceleration that does not include any acceleration due to gravity’ by subtracting (or otherwise removing) the acceleration due to gravity.”
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### 1. Analysis

The term “linear acceleration of the subject” appears in Claim 1 of the ’522 Patent and Claims 1 and 7 of the ’314 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The phrase “configured to determine from the motion data, a linear acceleration of the subject,” and the phrase “determining from the motion data a linear acceleration of the subject” appears in either Claim 1 of the ’522 Patent or Claims 1 and 7 of the ’314 Patent.

The parties agree that the patents distinguish “linear acceleration” from “gravit[ational acceleration].” The parties also agree that the claimed system removes the effect of gravity from such calculations. The parties dispute whether the system must produce/calculate a freestanding numerical “linear acceleration” via subtraction, as Defendant contends. Plaintiff argues that the system only needs to determine the acceleration in a way that removes the effect of gravity, via an accounting of any sort.<sup>11</sup>

Each claim of the ’522 and ’314 Patents requires determining a linear acceleration. Claims 1 and 7 of the ’314 Patent and Claim 1 of the ’552 Patent recite that the “linear acceleration” is determined from “motion data” that itself corresponds to the “motion of the subject.” *See, e.g.*, ’522 Patent at Claim 1; ’314 Patent at Claims 1, 7. The claim language indicates that linear acceleration must correspond to actual motion, actual movement. *See id.* at Claim 1 (motion data

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<sup>11</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 36-40); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 37-41); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 16-18).



corresponds to the “motion of the subject”). Thus, any forces or effects that might bias the motion data must be accounted for, so that the motion data corresponds to actual motion. For example, a fixed gravitational pull that does not itself reflect motion would not be true motion data and must be accounted for.

Consistent with the claims, the specification discloses that determining linear acceleration is needed to augment real-time GNSS data to determine whether the subject is in motion or stationary. *See, e.g.*, ’295 Patent at 16:43–47. This is because it is known with GNSS systems “that when the object/GNSS receiver is stationary, the subsequent calculated positioning information tends to ‘walk’ around even though the receiver is motionless.” *Id.* at 16:27–31. These “walking” errors are “due to the fact that the satellites in orbit continue to move as the receiver is stationary. This causes significant inaccuracies in the GNSS computation of where it is on earth.” *Id.* at 16:32–35. Therefore, the specification teaches that “filtered accelerometer output can be used in conjunction with the SoG value output from the GNSS and can reliably determine if the pet is in motion or stationary.” *Id.* at 16:52–54.

However, as discussed above, “[a]ccelerometers, due to their nature, measure both gravitational and linear acceleration in m/s/s,” and “only linear acceleration is needed.” *Id.* at 16:55–59. Therefore, the specification states that because “[t]he AHRS outputs raw acceleration which is the combined effect of acceleration due to gravity and any linear displacement ... [i]t is then necessary to subtract out the acceleration forces due to gravity thus leaving only linear acceleration.” *Id.* at 16:66–17:3. Indeed, the specification discloses that this is “highly critical when it comes to the accuracy of the system because as we know the GNSS information unfiltered tends to ‘walk’ causing greater inaccuracies.” *Id.* at 17:40–42.

Further clarifying this description, the patentee argued during prosecution that the “linear

acceleration of the subject” is “acceleration that does not include acceleration due to gravity.” Specifically, the patentee argued that one piece of prior art (the Toth reference) failed to overcome the deficiencies of another prior art (the Mueller reference) because “the output of the accelerometer disclosed in Toth includes acceleration due to gravity. Thus it does not disclose determining linear acceleration of the subject, as claimed.” Dkt. #71-4 at 84. Accordingly, the Court finds that the patentee clearly and unambiguously disclaimed any scope of linear acceleration that includes “acceleration due to gravity.”

Plaintiff does not propose a construction that requires removal of the effect of gravity. Instead, it construes “linear acceleration” as “acceleration of the subject *compensated for the effect of gravity*.” In other words, Plaintiff construction appears to ignore the intrinsic evidence as it relates to “linear acceleration.” That said, the Court agrees that the specification discloses one process of mathematically orienting the raw data from the accelerometer so that it can calculate the effect of gravity on each axis, and then “subtract” it. ’522 Patent at 17:6-64 (“The AHRS outputs raw acceleration which is the combined effect of acceleration due to gravity and any linear displacement. It is then necessary to subtract out the acceleration forces due to gravity thus leaving only linear acceleration.”). However, the Court finds that this is just one embodiment, and the claims should not be limited to “subtracting” to remove acceleration due to gravity. Indeed, Defendant appears to agree by proposing “by subtracting (or otherwise removing).”

Finally, Defendant’s construction for the phrases “configured to determine from the motion data, a linear acceleration of the subject” and “determining from the motion data a linear acceleration of the subject” is unnecessary, because the Court has resolved the parties dispute related to these phrases by construing the phrase “linear acceleration of the subject.”

## **2. Court’s Construction**

For the reasons set forth above, the Court construes the term **“linear acceleration of the subject”** to mean **“acceleration that does not include acceleration due to gravity.”** The phrases **“configured to determine from the motion data, a linear acceleration of the subject”** and **“determining from the motion data a linear acceleration of the subject”** are given their **plain and ordinary meaning.**

**J. “actual position” / “virtual position” / “assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data”**

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“actual position”	no additional construction necessary	“the location of the subject that has been determined based on position data”
“virtual position”	no additional construction necessary	“a location that has not been determined based on position data”
“assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data”	“assign the subject a location within the containment zone, rather than relying on the position indicated by weak satellite signal(s)”	No additional construction is necessary based on our constructions of virtual and actual positions.

**1. Analysis**

The term “actual position” appears in Claims 1 and 12 of the ’329 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The term “virtual position” appears in Claims 1 and 12 of the ’329 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The phrase “assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data” appears in Claims 1 and 12 of the ’329 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The parties dispute whether the claimed

“virtual position” can be any position within the containment zone that is not the current “actual position,” as Plaintiff contends, or if it has to be a position that has never been determined by using “position data,” as Defendant contends.<sup>12</sup>

The '329 Patent distinguishes between an “actual position of the subject” and a “virtual position” to which the subject may be assigned. '329 Patent at Claims 1, 12. The claims provide clarifying language indicating what constitutes an “actual position” and a “virtual position.” Specifically, the claims require that the actual position of the subject is “based on the position data.” *Id.* It is called the “actual” position, because it corresponds to the physical position of the subject that the device determines based on the position data generated by the positioning unit. This is consistent with the commonly understood meaning of “actual” (*i.e.*, “existing in fact or reality”), and the understanding of a person of ordinary skill in the art. Given that this is explicitly recited in the claim language, no further construction is required.

The claims also require the virtual position to be “different from the actual position.” *Id.* It is called the “virtual” position because it is used in place of the actual position of the subject determined by the position data. This understanding is consistent with the specification, which teaches that “the system will ‘place’ the pet in the containment perimeter 324 . . . notwithstanding its actual position.” '329 Patent at 18:61–65. It is also consistent with a common understanding of “virtual” as a something “not physically existing, but made by the software to appear to do so from the point of view of the program or the user.” Dkt. #71-1 at ¶ 166. Therefore, the “virtual position” is different than the “actual position,” and is used in place of the actual position. The Court further finds that after clarifying the meaning of “a virtual position in the containment zone,” the meaning

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<sup>12</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 40-42); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 41-43); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 18).

of the broader phrase “assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data” is readily understood, and no further construction is required.

Defendant argues that Plaintiff asks the Court to rewrite its claim to remove the words “actual location of the subject” and “virtual location.” Defendant contends that Plaintiff cannot read out the requirement that the virtual location must be different than the actual location, and that the actual location be based on position data. Defendant further argues that Plaintiff’s proposed language of “rather than relying on the position indicated by weak satellite signal(s)” lacks antecedent basis. Defendant contends that the claims require the actual location to be determined from position data, but makes no mention of the strength of the signal. The Court agrees with Defendant on these points.

Plaintiff replies that the parties agree that the “actual position” is one that is “based on position data” and that the “virtual position” (a) must be in the containment zone; and (b) be “different from” the actual position. Plaintiff argues that Defendant’s construction is unduly narrow, and a virtual position just cannot be the current, physical “actual position” of the subject.

The Court does not necessarily agree with Plaintiff’s argument, because it implies that the claimed device or method must continually monitor the virtual position and actual position to ensure that they are “currently” different. This requirement is not in the claim language. Instead, the claims require the processor to “assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data.” Once the device assigns a virtual position in the containment zone in place of the actual position of the subject, the claim limitation is met. Accordingly, the Court does not adopt Plaintiff’s construction.

However, to the extent that Defendant argues that the virtual position “has to be a position

that has never been determined by using position data,” the Court rejects that argument. In summary, the Court construes “a virtual position in the containment zone” to mean “a position in the containment zone that is used in place of the actual position of the subject.” The Court further finds that the term “actual position” and the phrase “assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data” do not require construction given the Court’s construction for “virtual position.”

## 2. Court’s Construction

For the reasons set forth above, the Court construes the term **“a virtual position in the containment zone”** to mean **“a position in the containment zone that is used in place of the actual position of the subject.”** The term **“actual position”** and the phrase **“assign the subject to a virtual position in the containment zone different from the actual position of the subject based on position data”** are given their **plain and ordinary meaning**.

### K. “obtain from the positioning unit the position data corresponding to the position of the subject”

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“obtain from the positioning unit the position data corresponding to the position of the subject”	“regularly receive information indicating the position of the subject”	Plain and Ordinary Meaning.

## 1. Analysis

The phrase “obtain from the positioning unit the position data corresponding to the position of the subject” appears in Claim 1 of the ’295 Patent. The parties dispute whether the phrase requires construction.<sup>13</sup> Plaintiff argues that there is a disconnect between a person of ordinary

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<sup>13</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 42-43); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 43-44); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 18-19).

skill in the art's understanding and a lay jury's understanding regarding the frequency of the claimed receiving and generating. Plaintiff contends that a person of ordinary skill in the art would appreciate that, in the context of the intrinsic evidence, "obtaining ... position data corresponding to the position of the subject" connotes receiving the data in regular, or semi-regular, intervals. According to Plaintiff, the satellites in a satellite-based location systems (*e.g.*, GNSS systems) send signals to ground-based receivers in rapid succession (*e.g.*, multiple times per second).

Plaintiff further argues that satellite-based location systems require signals from multiple satellites (four or more) to calculate the geolocation position of the receiver. Plaintiff contends that this means that a receiver receiving satellite signals would be receiving multiple signals per second from multiple satellites, which all happens in rapid succession. Plaintiff argues that the specification is consistent with this understanding. Dkt. #67 at 43 (citing '295 Patent at 14:29–30, 16:7, 16:2–4). According to Plaintiff, a person of ordinary skill in the art would appreciate this feature of the claimed system, and a lay jury likely would not.

Defendant responds that Plaintiff is asking to Court to rewrite its claim in a variety of ways. Specifically, Defendant argues that Plaintiff first asks the Court to change "obtain" to "regularly receive." Defendant further argues that Plaintiff asks the Court to remove "the positioning unit" altogether. Defendant also contends that Plaintiff asks the Court to change "position data" to "information." Finally, Defendant argues that Plaintiff asks the Court to change "corresponding to the position of the subject" to "indicating the position of the subject." Defendant correctly argues that Plaintiff only addresses the first of these proposed changes in its briefing, and does not provide an reasoning for making the other changes.

The Court agrees that Plaintiff has not provided a persuasive reason to redraft the claim as it proposes. The Court further agrees with Defendant that Plaintiff is improperly attempting to

limit the claims to a preferred embodiment. The patentees chose the word “obtain” instead of “regularly receive” to describe the claimed invention. That limitation does not preclude obtaining the position data multiple times, but it does not require it. Plaintiff has not identified words of manifest disclaimer restricting the scope of the claim. Accordingly, the Court is not at liberty to redraft the claims as Plaintiff proposes. *K-2 Corp. v. Salomon SA*, 191 F.3d 1356, 1364 (Fed. Cir. 1999) (“Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee.”). The Court finds that the disputed phrase is unambiguous, is easily understandable by a jury, and should be given its plain and ordinary meaning. *Aventis Pharm., Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (“There is a heavy presumption that claim terms are to be given their ordinary and customary meaning.”).

## 2. Court’s Construction

For the reasons set forth above, the phrase **“obtain from the positioning unit the position data corresponding to the position of the subject”** is given its **plain and ordinary meaning**.

### L. **“within a predetermined distance of a perimeter of the containment zone”**

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“within a predetermined distance of the perimeter of a containment zone”	No construction necessary, but in the alternative, “within a specified distance of the containment perimeter.”	If the Court determines “containment perimeter” is not indefinite, this term should be construed to be: “within a specified distance of the containment perimeter”

## 1. Analysis

The phrase “within a predetermined distance of the perimeter of a containment zone” appears in Claims 6 and 15 of the ’295 Patent, and Claims 8 and 19 of the ’329 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same general



meaning in each claim. The parties dispute whether the phrase requires construction.<sup>14</sup>

Defendant argued in its briefing that the phrase is poorly written, because it recites “*the* perimeter” without any antecedent basis. Contrary to Defendant’s argument, none of the claims recite “*the* perimeter,” but instead recite “*a* perimeter.” Defendant confirmed during the claim construction hearing that “*the* perimeter” was an error on its part. Given that all of the claim recite “*a* perimeter,” there is not an antecedent basis issue, and the phrase will be given its plain and ordinary meaning.

## 2. Court’s Construction

For the reasons set forth above, the phrase “**within a predetermined distance of the perimeter of the containment zone**” is given its **plain and ordinary meaning**.

### M. “an average carrier to noise ratio from a plurality of satellites”

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“an average carrier to noise ratio from a plurality of satellites”	No construction required	“the sum of the carrier to noise ratio values received from each satellite of the plurality of satellites divided by the total number of the plurality of satellites”

## 1. Analysis

The phrase “an average carrier to noise ratio from a plurality of satellites” appears in Claims 5 and 16 of the ’329 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same general meaning in each claim. The parties dispute whether the phrase requires construction.<sup>15</sup>

<sup>14</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 43); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 45-46); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 19).

<sup>15</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 44-45); Defendant’s Responsive Claim Construction Brief (Dkt.

Plaintiff argues that averaging is a commonly understood concept that a lay jury would understand. Plaintiff contends that Defendant's construction replaces easily understood claim language with a prescribed description of a series of particular mathematic operations. Plaintiff also contends that Defendant's construction makes jury confusion more likely by using twice as many words as the claims do to describe an easily understood concept.

Defendant argues that their construction provides needed clarity because averaging ratios from multiple sources may not be intuitive to some jurors. Defendant contends that its proposed construction is consistent with the plain and ordinary understanding of how to determine the mathematical function of finding an "average." Defendant further argues that averaging is a specific mathematical operation, and that Plaintiff has not identified any alternative way to calculate average carrier to noise ratio from a plurality of satellites.

Independent Claims 1 and 12 recite determining from the position data if the carrier to noise ratio is greater than a first predetermined threshold. Dependent Claims 5 and 16 add the additional limitation of determining an average carrier to noise ratio when it involves position data from a plurality of satellites. The specification explains that the device "obtain[s] the Carrier-to-Noise (C/N0) ratio of each satellite" for all satellites "that the GNSS receiver [of the positioning unit] is in communication with." '329 Patent at 18:49–58. The system then "averages all the C/N0s together to get the average C/N0 ratio." *Id.* This provides a "total averaged" C/N0 value. *Id.* at 18:53-63. Accordingly, the Court construes the phrase "an average carrier to noise ratio from a plurality of satellites" to mean "a carrier to noise ratio that is determined by averaging the carrier to noise ratio obtained from each of a plurality of satellites" *See Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("The construction that stays true to the

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#71 at 45-46); and Plaintiff's Reply Claim Construction Brief (Dkt. #73 at 19).

claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.”).

## 2. Court’s Construction

For the reasons set forth above, the Court construes the phrase **“an average carrier to noise ratio from a plurality of satellites”** to mean **“a carrier to noise ratio that is determined by averaging the carrier to noise ratio obtained from each of a plurality of satellites.”**

**N. “a device configured to be disposed on a subject for use by an operator for tracking the subject” / “a method for an operator to track a subject by way of a device worn by the subject”**

<u>Disputed Term</u>	<u>Plaintiff’s Proposal</u>	<u>Defendant’s Proposal</u>
“a device configured to be disposed on a subject for use by an operator for tracking the subject” / “a method for an operator to track a subject by way of a device worn by the subject”	The preambles of claims 1 and 7 of the ’314 Patent are limiting and no other construction of the entire preamble is necessary.	No construction required

## 1. Analysis

The phrase “[a] device configured to be disposed on a subject for use by an operator for tracking the subject” is the preamble of Claim 1 of the ’314 Patent. The phrase “[a] method for an operator to track a subject by way of a device worn by the subject” is the preamble in Claim 7 of the ’314 Patent. The parties dispute whether the preambles in Claims 1 and 7 of the ’314 Patent are limitations on the claims.<sup>16</sup>

The general rule is that “preamble language is not treated as limiting.” *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1347 (Fed. Cir. 2012). The exception to the general

<sup>16</sup> The parties’ arguments for this disputed term can be found in Plaintiff’s Opening Claim Construction Brief (Dkt. #67 at 45); Defendant’s Responsive Claim Construction Brief (Dkt. #71 at 46-48); and Plaintiff’s Reply Claim Construction Brief (Dkt. #73 at 19).

rule comes when a preamble “recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim.” The Court finds that the preambles are limiting.

The preambles provide an antecedent basis for the terms “operator” and “subject.” This is enough to make the preambles limiting. *See, e.g., Pacing Tech., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1023-24 (Fed. Cir. 2015) (preamble limiting because it provided antecedent basis and was necessary to understand other limitation in body of claim). Furthermore, Defendant offers no explanation for why these preambles are not limiting when it agrees that the preambles in the other three patents are limiting. All of the preambles share a similar structure and provide antecedent basis for terms recited in the body of the claims.

## **2. Court’s Construction**

For the reasons set forth above, the preambles of Claims 1 and 7 of the ’314 Patent are limiting.

## **V. CONCLUSION**

The Court adopts the constructions above for the disputed terms of the Asserted Patents. Furthermore, the parties should ensure that all testimony that relates to the terms addressed in this Order is constrained by the Court’s reasoning. However, in the presence of the jury the parties should not expressly or implicitly refer to each other’s claim construction positions and should not expressly refer to any portion of this Order that is not an actual construction adopted by the Court. The references to the claim construction process should be limited to informing the jury of the constructions adopted by the Court.

**SIGNED this 20th day of May, 2022.**

A handwritten signature in black ink, reading "Amos Mazzant", is written over a horizontal line.

AMOS L. MAZZANT  
UNITED STATES DISTRICT JUDGE